

ABSTRACT

5 An object of the present invention is to provide a
Group III nitride semiconductor multilayer structure
having a smooth surface and exhibiting excellent
crystallinity, which multilayer structure employs a low-
cost substrate that can be easily processed. Another
object is to provide a Group III nitride semiconductor
light-emitting device comprising the multilayer
10 structure.

 The inventive Group III nitride semiconductor
multilayer structure comprises a substrate; an $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 1$)
buffer layer which is provided on the substrate
and has a columnar or island-like crystal structure; and
15 an $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$ ($0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x + y \leq 1$)
single-crystal layer provided on the buffer layer,
wherein the substrate has, on its surface, non-
periodically distributed grooves having an average depth
of 0.01 to 5 μm .